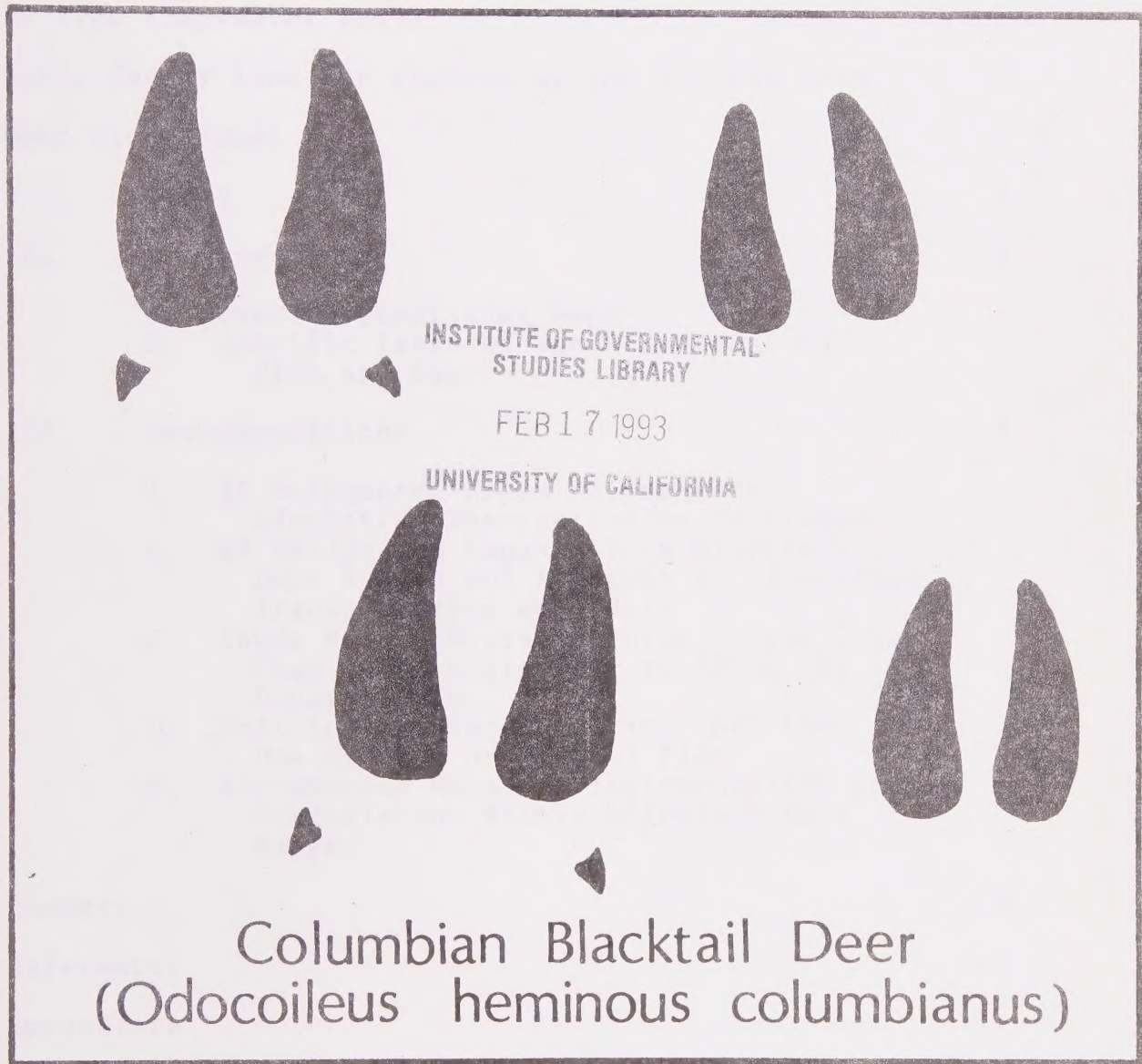


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Report of the **Butte County Deer Herd Study Panel**



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MAY 1984



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TO: BOARD OF SUPERVISORS
FROM: DEER HERD STUDY PANEL
Date: April 26, 1984

COMMITTEE BACKGROUND

On August 2, 1983, the Butte County Board of Supervisors appointed a committee known as the "Deer Herd Study Panel". The purpose of the panel was to study ways to maintain deer levels and minimize the impact of development on migratory wildlife. The membership of the panel includes representatives from the California Department of Fish and Game, Butte County Fish and Game Commission, Butte County Planning Commission, an independent professional planner, an engineer, a professional environmental consultant and a land owner.

The panel met between September 1983 and March 1984 developing, with the aid of the County Planning Staff, a series of overlay constraint maps identifying various facets of the deer issue. These facets included mapping the developed areas of Butte County, the deer ranges, the A-R (Agricultural-Residential) General Plan designation and the identified transportation corridors. These overlays gave a visual interpretation of the areas where the panel focused its concern, namely, the overlap of the A-R General Plan designation and the critical ranges.

Following is a consensus report for policy and implementation of the findings and recommendations pertaining to the areas focused upon by this panel.

MIKE EVANS, CHAIRMAN

MIGRATORY DEER STUDY PANEL REPORT

BUTTE COUNTY

INTRODUCTION

Three separate migratory deer herds are found in the eastern foothill/mountains of Butte County; the East Tehama, Bucks Mountain, and Mooretown deer herds. While some summer and intermediate ranges are found in the County, the majority of the deer habitat is winter range. Deer herds migrate each fall from their summer ranges in Tehama, Plumas, and eastern Butte Counties to their winter range in Butte County. During mild weather deer usually linger at the higher elevations of their winter range until forced down by the first major snow storm to their "critical" winter range. Deer generally remain concentrated on the critical winter ranges until early April, persevering the stresses and hardships of winter.

Migratory deer have used their summer and winter ranges in the past with little disturbance from human activity and development. However, this situation has changed in recent years.

Subdivisions have encroached and are continuing to encroach into deer ranges at an accelerating rate; in particular, the winter range. Subdivision and developed parcel divisions allow land use changes which result in a permanent loss of deer habitat. Forage and cover plants are eliminated. Disturbance from noise, traffic, and domestic dogs increase. Poaching problems generally increase along with increased public use as a result of improved road access and subdivisions in the deer range.

Loss of deer ranges, particularly winter range, to development has become a major problem threatening the welfare of migratory deer along the western slope of the Sierra. Deer face further hardships in the future unless planning efforts are expanded to identify important deer ranges and control and direct development to less sensitive areas.

ENVIRONMENTAL LAWS

Several laws apply to proposed subdivisions in deer ranges. Some of these are, 1) the Subdivision Map Act, 2) the California Environmental Quality Act (CEQA), 3) AB 1521 of 1977 and 4) the Butte County Land Use Element of the General Plan.

Subdivision Map Act

Section 66474(e) of the Act states, "A legislative body of a city or county shall deny approval of a tentative map, or a parcel map for which a tentative map was not required, if it makes any of the following findings: (e) that the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat."

California Environmental Quality Act (CEQA)

CEQA guidelines require an Environmental Impact Report (EIR) be prepared for projects having a significant adverse impact upon the environment. Section 15091 of the guidelines identify the findings under which a public agency may (or may not) approve a project having one or more significant adverse effects that are identified in an EIR.

AB-1521 (September 1977)

This bill declares it to be the policy of the legislature to encourage the conservation, restoration, maintenance, and utilization of California's deer populations. The bill further provides a legislative mandate to the Department of Fish and Game to develop plans to manage deer herds. The objectives of these plans are the restoration and maintenance of healthy deer herds in the wild state and to provide for high quality and diversified use of deer in California.

Butte County Land Use Element of the General Plan

The Land Use Element's policy toward deer is to "regulate development in identified winter ranges to facilitate the survival of deer herds".

DEER STUDY PANEL

In August of 1983, the Butte County Board of Supervisors created a Deer Study Panel to study the problem of development encroachment into the migratory deer herds' ranges. The panel consists of representatives from the Department of Fish and Game (DFG), Butte County Fish and Game Commission, Butte County Planning Department, an independent planning professional, a private engineer, environmental consultant, and a private landowner. The panel's responsibility was to study ways to minimize the impact of development on migratory deer and to maintain the population levels of these migratory animals.

The following briefly outlines the deer panel's goals, programs and recommendations:

I. GOALS

- To provide protection to migratory deer in Butte County against significant adverse impacts from subdivision development.
- To identify important migratory deer habitats.
- To develop a General Plan Land Use Element policy and implementation procedure to achieve these goals.

II. PROGRAMS

A. Develop overlay constraint maps on:

- Deer herd information maps (e.g., summer range, winter range, migration corridors, etc.).
- Parcel sizes averaging five acres or less, six to 20 acres, and 21 acres or greater.
- General Plan designations with its existing minimum acreage size and existing zoning.
- Identified transportation corridors.
- Other constraint maps be developed to identify buildable areas (e.g., slope, soil depth, stream setback, etc.).*

*Task to be accomplished.

B. The Department of Fish and Game's (DFG) specific tasks are the following:

- Identify deer migration "windows" through selected transportation corridors. This will be provided to the County Planning Department in the summer of 1984.
- Update their migratory deer herd range maps at least once every five years to facilitate any future amendments to the Land Use Element and Natural Resources Element of the Butte County General Plan.

C. Develop mitigation measures to protect migratory deer.

III. RECOMMENDATIONS

A. IN AR DESIGNATED AREAS ADJACENT TO IDENTIFIED TRANSPORTATION CORRIDORS(see Table I):

1. Establish a perimeter fence design criteria. On parcels greater than five acres in migratory deer range, the perimeter fence is limited to barbed wire (unless a special use permit is acquired). To allow passage of deer, the fence should be constructed of five strands or less of barbed wire: the bottom and top wire be a minimum of 16 inches and a maximum 48 inches above the ground.

2. Create a deer habitat improvement fund by establishing a one time fee for allowing development of less than 40 acres minimum parcel size in critical summer and winter range and 20 acre minimum parcel size in noncritical summer and winter range. The fee (\$45/acre in critical summer and winter range and \$25/acre in noncritical summer and winter range) would be paid by the landowners when they apply for a building permit. The fund would be to improve deer habitat elsewhere in the County as mitigation for development impacts along designated transportation corridors.

Alternative to fee structure:

<u>Acres</u>	<u>Fee/Acre</u>
0-10	\$45
10.01 - 20	\$25
20.01 - 39.99	\$15
40+	No fee

3. Adopt attached Appendix "A" as a county dog control ordinance.

4. The Board of Supervisors should determine which one of the following scenarios they wish to implement to allow cluster development within the AR designation areas along the identified transportation corridors (TC):

Scenario "A"

Allow development of existing parcels to a density less than a 40 acre minimum in winter range if the landowner(s) along the TC can combine with a landowner(s) of AR lands within the critical winter range outside the TC who is/are willing to transfer their development rights to the TC. In this manner, if both parties were in agreement, the lands along the TC should be developed into a cluster concept limited by other constraints (e.g., slope, soil permeability, soil stability, etc.). AR designated lands within the critical winter range that are not located along the TC would be left undisturbed in perpetuity. This alternative would allow an equal sharing of the economic gains through development along the TC.

Scenario "B"

Allow development of AR designated lands along the TC to less than 40 acres minimum on critical summer and winter range and 20 acre minimum on non-critical summer and winter range. Development along the TC would be as described in Scenario "A". AR designated lands not along a TC would be limited to 40 acres minimum on major migration corridors, holding areas, critical summer and winter ranges and 20 acre minimums on non-critical summer and winter range. The landowners would not share in the economic benefits of development along the TC.

TABLE I
DEER STUDY
IDENTIFIED TRANSPORTATION CORRIDORS
IN AGRICULTURAL RESIDENTIAL DESIGNATIONS OF THE BUTTE
COUNTY GENERAL PLAN

Cohasset Road
Richardson Springs Road
Highway 70
Highway 32
Honey Run Road
Skyway (To Inskip)
Neal Road
Clark Road
Pentz Road
Concow Road
Big Bend Road
Cherokee Road
Oro-Quincy Highway
Bald Rock Road
Forbestown Road (but not Lower Forbestown Road)
Stringtown and Lumpkin Roads
Black Bart Road
Swedes Flat Road - including Hurleton-Swedes Flat Road
LaPorte Road
Upham Road
Hurleton Road

5. The Department of Fish and Game (DFG) will identify deer migration "windows" through the TC where parcels will remain at least 40 acres minimum in critical winter range and 20 acres in winter range to allow deer movement to occur.

B. IN AR DESIGNATED LANDS WITHIN MIGRATORY DEER RANGES THAT ARE NOT ADJACENT TO THE TC:

1. Maintain either the existing parcel size or a 40 acre minimum in critical summer and winter ranges, major migration corridors, holding areas, and 20 acre minimum on non-critical summer and winter ranges.
2. Encourage landowners to transfer their development rights to acres within the above mentioned TC areas (see Section III.A.4.) if Scenario "A" is selected.
3. Establish perimeter fence design criteria (see Section IV.A.1.).
4. Adopt Appendix "A" as the dog control ordinance.

C. ON LANDS WITHIN MIGRATORY DEER RANGES OTHER THAN THOSE DESIGNATED AS AR IN THE GENERAL PLAN:

1. Maintain existing General Plan designations and existing minimum parcel sizes.
2. Establish a perimeter fence design criteria (see Section III.A.1.).
3. Enforce Appendix "A" as the County dog control ordinance.

D. THE FOLLOWING POLICIES SHOULD BE INCORPORATED INTO THE
LAND USE ELEMENT OF THE GENERAL PLAN.

Policy

- On migratory deer range lands, maintain the existing General Plan Land Use designations and minimum parcel sizes.
- Except on AR designated lands adjacent to identified transportation corridors, no parcel division and development of less than 40 acres minimum in major migration corridors, critical summer and winter range and 20 acres minimum in noncritical summer and winter range will be allowed.
- Regulate development in identified deer ranges to facilitate the survival of the deer herd.
- Encourage the transfer of development rights if Scenario "A" is selected for implementation (see Section III.A.4.)

E. RECOMMENDED MEANS OF IMPLEMENTATION FOR SUBDIVISIONS
WITHIN MIGRATORY DEER RANGES.

- Retain existing General Plan designations and minimum parcel sizes.
- Incorporate appropriate mitigation measures in Covenants, Conditions and Restrictions (C.C. and Rs).
- Incorporate appropriate mitigation measures as conditions of building permit approval.
- Incorporate appropriate mitigation measures as conditions of land division approval.
- A county ordinance be created to require a special use permit for the construction of all woven wire (e.g., cyclone, hogwire, etc.) perimeter fences on parcels greater than five acres in migratory deer ranges.

- Establish an ordinance (Appendix "A") which is effective in controlling dogs in migratory deer ranges.
- Require building envelopes along the TC.
- Establish a deer habitat fund by collecting a fee for development within designated transportation corridors (see Section III.A.2.).
- The County should appoint an ad hoc committee or fund a study to develop constraint map overlays along the identified transportation corridors to identify buildable areas (e.g., slope, soil depth, soil permeability, soil stability, stream setbacks, etc).

SUMMARY

Protection provided through the above mitigation measures to migratory deer is accomplished without any proposed changes to the land use designations of the existing Land Use Element of the General Plan. Since the above mitigation measures do allow controlled development to occur adjacent to selected transportation corridors, deer habitat will be lost along these areas. This places greater importance upon the remaining deer habitat to sustain the herds. Implementation of the above mitigation measures will: 1) limit intense development to areas adjacent to transportation corridors on land designated as AR in the General Plan, and 2) create a fund to be used for habitat improvement projects on critical deer ranges to improve the quality of the habitat. These sites would be determined by the Department of Fish and Game working in close cooperation with the Butte County Fish and Game Commission.

In developing the above recommendations, assumptions were made that mitigation measures "III.B." and "III.C." could be achieved. Any deviations from our assumptions would result in unmanaged land development that would be inconsistent with the Subdivision Map Act, the existing Land Use Element Policy of the General Plan, and the existing California Legislature Policy (AB 1521 of 1977).

REFERENCES

1. Responsibilities of Department of Fish and Game, Local Agencies, Property Owners (prepared by Mike Evans).
2. Article entitled "Converting Chaparral to Grassland Increases Soil Fertility".
3. Article entitled "Evaluating the Profitability of Brush Management and Oak Tree Thinning for Range Improvement".
4. Letter from Department of Fish and Game dated February 10, 1983 pertaining to Areas of Special Biological Importance and migratory deer herds.
5. Letter from Department of Fish and Game dated January 6, 1983 dealing with migratory deer in the Butte County foothills.
6. Minutes from the December 21, 1982 meeting of the Board of Supervisors - motion on item 4.10 about the 40 acre minimum parcel size recommended by the State Department of Fish and Game.
7. Letter from Department of Fish and Game dated March 30, 1982 regarding the change in recommendations from 20 to 40 acre minimum parcels in important deer winter ranges.
8. Assembly Bill No. 1521 of 1977.
9. Subdivision Map Act as amended January 1, 1984, Section 66474.
10. Excerpt from Land Use Element of Butte County General Plan, October 1979.
11. Excerpt from Open Space Element of Butte County General Plan, 1973.
12. Unified Sportsmen of D2X Information.
13. Existing County Dog Ordinance; Division 14 of Food and Agricultural Code - Regulation and Licensing of Dogs.

APPENDICES

- A. Proposed Revised Butte County Dog Ordinance.
- B. Letter from Department of Fish and Game, dated February 24, 1984, about December 1983 migratory deer herd maps.
- C. Articles entitled "What is Deer Habitat and How Can It be Managed?" and "Feeding Strategy of Deer" - handouts from Deer Herd Management Series held in Chico on February 8, 13, and 15, 1984.
- D. Letter from Department of Fish and Game dated March 29, 1983 addressing migratory deer herd winter range losses to residential development in Butte County.
- E. Letter from Department of Fish and Game dated January 31, 1983 concerning the three migratory deer herds which utilize Butte County, hunting zones, license per zone, deer take per year, deer harvest and deer populations per herd.
- F. Natural Habitat Combining District, Lassen County; means used to address residential development within recognized wildlife areas.

APPENDIX "A"

PROPOSED REVISED BUTTE COUNTY DOG ORDINANCE

112. The provisions of this ordinance shall apply to the unincorporated, undeveloped, or very low density residential areas in the foothills and mountains east of Highway 99 (see Exhibit available at Butte County Planning Department, 7 County Center Drive, Oroville, for specific locations where ordinance applies).
113. In any instance in which a dog or dogs is/are observed killing, wounding, or pursuing deer, except as noted in Section 114, the person observing this action may kill the dog(s) if they are on their own property, have the permission of the landowner, or are on public lands (e.g. U.S. Forest Service, Bureau of Land Management, etc.).
114. The provisions of Sections 112 and 113 shall not apply to any of the following:
- a. Any area within the corporate limits of any city, or within any developed rural or residential area with lot sizes of less than three acres.
 - b. Any dogs being used for the purpose of lawful training or hunting during prescribed dog training or hunting seasons.
 - c. Dogs in the immediate presence and under direct control of the owner. The dog must be in close proximity to the owner and the owner must demonstrate effective control of the dog.
115. The provisions of this act do not provide a legal reason for unauthorized trespass. Offending dogs may be shot only by persons with a right or permission to be on the property.

All incidents occurring under this provision, whether or not the offending dog or dogs are shot, must be reported to local law enforcement officials including Department of Fish and Game personnel.

DEPARTMENT OF FISH AND GAME

REGION 2

1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CALIFORNIA 95670
(916) 355-7030



February 24, 1984

Bettye Kircher, Director
Butte County Planning Department
7 County Center Drive
Oroville, CA 95965

Dear Bettye:

This letter is to advise you that the December 1983 migratory deer herd maps for Butte County recently sent to you supersede the migratory deer herd information contained in the 1979 Butte County ASBI map.

If we can be of further assistance, please contact Jerry Mensch, Environmental Services Supervisor, telephone (916) 355-7030.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Paul'.

Paul T. Jensen
Regional Manager

Butte Co. Planning Comm.

FEB 27 1984

Oroville, California

WHAT IS DEER HABITAT AND HOW CAN IT BE MANAGED?

By

E. Lee Fitzhugh, Wildlife Extension, University
of California, Davis, CA 95616 and

Everett R. Doman, formerly with U.S. Forest Service,
San Francisco, CA

Habitat is the place an animal lives, including all the necessary things the animal needs to survive and prosper. All animals need food, water, and cover in some form. In addition, each different kind of animal has its own special needs.

Food provides roughage to assist in digestion, as well as energy, protein, essential minerals and trace elements. Water is needed for energy conversion, to aid the body in transporting nutrients and for excreting wastes. Cover helps the animal conserve energy by protecting it from weather, predators, and by making it feel safer, thus reducing the nervous energy requirement. Special requirements for deer include special holding areas on migration routes, with high-nutrition forage for pregnant does; fawning areas in high meadows with tall cover, near water; and sometimes protection from domestic dogs. In addition, each of these needs must be available during each season of the year, wherever the deer is at that time.

Energy and Nutrition. The amount of energy and nutrients a deer can get from its habitat depends on the quality of the food resource. The amount of energy and nutrients needed depends on the physical stress placed on the deer. Besides the need to keep up body temperature, provide for pregnancy, lactation, antler growth, and similar physiological stresses, the amount and quality of cover and the interspersed food, water, and cover influence the stress placed on deer. The poorer water, cover, and interspersed food are, the more stress, and the higher quality food is required to sustain the metabolism and activity of the animal.

Food. What plants provide nutritious and high-energy food for California deer? The diagrams (Figs. 1 & 2 in "Feeding Strategy of Deer") show the normal dietary change with different seasons at the Hopland Field Station of the University of California, in Mendocino County. Exact relationships will change slightly in different parts of the state, but the principle that deer require different kinds of food at different seasons is consistent. As a generalization, we can say that deer prefer certain species of grasses and broad-leaved herbaceous plants (forbs, or "weeds") when they are newly sprouted and growing rapidly. The preference for broad-leaved plants lasts longer than for grasses, which become hard and coarse more rapidly. As the herbs mature and harden, deer turn to shrubbery and, in fall, to acorns. (See "Feeding Strategy of Deer" for more information on food.)

Several studies have been made of fawn production in relation to range or deer habitat condition. These studies show that the ability of does to produce fawns varies widely and is correlated directly with food supply.

In "A Survey of California Deer Herds", it was noted that on ranges rated "as being in the best relative condition, such as Cow Mountain and in the Truckee River Canyon, fawns averaged over 70 per 100 does at midwinter". On the poorer condition ranges "fawn numbers were considerably lower" and dropped to as low as 33 per 100 does on a very poor condition range in Inyo County. At the Hopland Field Station, Mendocino County, years of above-average acorn crops were followed by recruitment the following July of about 74 fawns per 100 does, an increase of 50% above average.

In addition to increased fawn production and survival, good habitat conditions are reflected in larger deer and better antler development. The first antlers of deer on impoverished ranges will be mostly small spikes. However, when nourished properly on good condition ranges, this first set of antlers will be mainly "forked horns" and often even 3 or 4 pointers. Thus good habitat reflects not only in numbers of deer but in deer quality which is very important to most sportsmen.

Much of the deer range in California and particularly the winter range is private land. Large acreages in the foothill and valley borders that now produce agricultural crops or have been developed for homesites were formerly some of the most productive deer ranges. When deer numbers build up beyond the capacity of their present range and food supplies become scarce, it is to be expected that deer will invade the adjacent vineyards, orchards, alfalfa and grain fields, truck crops, artichoke patches and other agricultural lands where green and succulent forage can be obtained. With the large numbers of deer that are presently existing on the 8,000,000 acres of private commercial forests in California, it is also inevitable that considerable damage will be done to conifer seedlings. Deer damage is bound to continue on a growing scale as additional lands are developed within deer habitat unless effective measures are taken to keep the deer numbers in balance with the natural food supply. Fencing, repellents, and depredation shooting will continue to be needed. However, the most practical method of easing the depredation problem is through planned removal by hunters of surplus deer of both sexes in regular or special hunts before they increase to such an extent that they damage their natural range.

Water. Migratory deer can use snow and rain puddles for water in wintertime and do not need open water then. In other seasons, the need for water varies with the temperature and amount of exertion required to "make a living". Some subspecies of deer may be able to exist without free water, notably the desert-adapted deer. While most deer probably have the ability to live as far as 5 miles from open water, the need to travel back and forth puts additional strain on the animals and subjects them to danger from predation. The best situation would be to have water available within a mile.

Cover. Deer need at least three different kinds of cover. Thermal cover is tall and dense and protects deer from the elements, rain, wind, sun, and chilling outward heat radiation at night. Thermal protection requires vegetation well above the deer's head, and with 60 to 70% canopy coverage. Hiding cover is vegetation or topography (hills, rocks, etc.) sufficient to hide a deer from sight in a distance of 200 feet. Fawning cover consists of tall herbaceous vegetation (grass and weedy plants) near water and thermal cover, with nutritious food close by.

Interspersion. A deer normally stays within a square mile area except when migrating or during the rut. All of the necessary items must be supplied within that area or there is no home for a deer. Deer may use considerably less than a square mile if all the requirements are found closer together, and abundantly. Deer densities of 160 per square mile have been recorded in the western United States. To achieve habitat that will support these high populations, the food, water, and cover must be interspersed in close proximity so the deer can find all they need without travelling far. About 10% of the area should be in thermal cover. This requirement may expand some in winter and summer ranges and be somewhat less in spring and fall ranges. Hiding cover should comprise 20% of the area, with another 10% in either fawning, thermal, or hiding cover, depending on the season of year deer use the area. The remainder, 60%, should be in food-producing areas. Any significant variation in these proportions will reduce carrying capacity for deer. Of course, some vegetation, notably open brush stands, may satisfy more than one requirement.

Two Kinds of Habitat Problems. There are two basically different kinds of problems with habitat, both of which cause deer to be in poor condition. First, there may be good habitat, but too many deer. The competition is great, and most deer get insufficient food, cannot find cover that is not already used, and are weakened and subjected to predation and disease. The second kind of problem is with habitat that is just plain poor, regardless of how many deer are there. These places produce poor deer even with low populations. Competition still operates, and lowering the population even more will help, but not as much as with habitat that is better.

Both kinds of problems result in poor fawn crops and low recruitment into the herd. The first kind can be resolved entirely by reducing the deer population. The second kind requires herd reduction first, and habitat improvement afterward. (If habitat improvement comes first, the hungry overpopulation of deer will destroy the improvements, as many timberland owners and alfalfa growers know.)

Deer habitat management is a field in which you "can have your cake and eat it too". Deer cannot be stockpiled. After the herd builds up to the capacity of its habitat, full utilization of the annual herd increment promotes full production and healthy deer. It has been pointed out that waste of surplus game animals by undercropping after the animals are at the capacity of their habitat "is no more conservation than 'saving' applies by leaving them on the trees". Since uncontrolled deer numbers invariably reflect on health of the deer and health of the deer range, it follows that the best kind of habitat management also requires management of the animals. It is futile and generally a waste of dollars to try to improve deer habitats unless the animals are also managed to make the most of the improvements.

DEER HABITAT IMPROVEMENTS

While there are numerous ways in which natural deer habitats can be improved, the most effective means is through manipulation of vegetative types. The three types in which greatest improvement can be made are the chamise, the mixed brush and the forest. Ordinarily, the forest types are of high economic value for the production of wood products and here habitat improvement for deer is usually by the indirect approach of coordination with timber management activity.

Improvement of Timbered Deer Habitat. Most people associate deer with undisturbed forests. Actually, they do much better on timbered lands that have been partially cleared and settled by man. Unlogged virgin forests with closed canopies produce only small quantities of usable deer forage. Also, due to shading, the plants that do grow here are low in protein. Because of this low quantity and quality of food in mature forest types, deer numbers are also low.

When the forest is burned or logged, low growing vegetation responds quickly in both amount and quality. Because of the deer's need for heavy cover, only the edges of large open areas are used for feeding. Therefore, in correlation of timber management and deer habitat management, the most productive results from a deer forage standpoint are obtained from a timber harvest system that results in a large number of well scattered, small, clear cut blocks or patches. Fortunately, the interests of silviculture also often call for rather narrow openings, so that natural seed fall from the uncut trees on the edges will be adequate. In Douglas-fir, for example, strips not over 600 feet wide are recommended. The timber cutting cycle may vary from 50 to 100 years. If the clear cut areas will be productive of deer food for about 15 years, the cutting rotation should include from 4 to 6 cuttings, depending on the length of the cutting cycle.

Management of Brushlands Habitat. In California, it has been estimated that there are over 7 million acres of brushlands dominated by chamise (Adenostema fasciculatum). Other brush types occupy additional millions of acres. The greatest opportunity for direct habitat improvement for deer lies within these dense brush types.

Dense stands of old growth brush produce only a fraction of the deer forage that is produced by young stands or stands that are opened up. Opening dense brush types provides a more desirable interspersed of food and cover. Where good management is applied, these treated brushlands will remain productive over a long period of time with a minimum of further disturbance. Thinning out the old growth can also be done in a way that will improve the chances for wildfire prevention and control, improve watersheds, and improve habitat for quail, doves, and rabbits.

In a study conducted by the University of California a number of years ago in Lake County, it was found that the number of deer in heavy, closed brush types averaged 10-30 per square mile; in wildfire burns 5 to 160; and in opened brush 40 to 110. Fawn production also increased with brush treatment. It was found that there were 60 to 80 fawns per 100 adult does in heavy brush areas; 100 to 110 fawns per 100 adult does on the wildfire burns and about 115 to 140 fawns per 100 adult does in opened brush. These higher populations and higher fawn production rates were attributed to better nutrition on the burned or opened brush ranges. More herbaceous forage is available and the deer diet consists largely of herbs in the late winter and early spring. The authors of this study concluded that "in the opened brush, the deer have available an excellent diet during four months of the year, foraging on abundant herbs and new sprouts (Feb-May), a good diet for another four months (Nov, Dec, Jan, and June) when some green herbs are available and sprouts are still growing in the spring and early summer; and a poor diet during the remaining four months (July-October) when the herbs are dry and the browse plants more or less dormant. In the heavy brush, the deer have access to an excellent diet only two months of the year (April, May) when the brush is growing rapidly, a good diet for two months (March and June) when there is some shrub growth, and a poor diet for eight months----"

Methods for Improving Brushland Habitat. Several practical methods have been developed to open dense brush for game habitat improvement. These include burning, mechanical treatment, and application of chemicals. These methods are used singly or in combination depending on the objectives, risks involved, brush cover conditions and topographical or other features of each area.

Burning

Guidelines have been developed for safe use of fire in opening up dense brushlands. Shrubs that sprout after fire, notably chamise and many oaks, can provide nutritious and palatable forage for deer during the summer following a spring burn. However, spring fires tend to destroy non-sprouting shrubs, many of which are highly desirable for deer forage. Fall or early winter burns are better for those species.

Chemical and Mechanical Brush Treatment

Chemical and mechanical treatment have some advantages, but they also leave large amounts of woody residue, creating high wildfire hazard. Chemical treatment

is often used to follow burning or mechanical treatment to maintain the brush control or type conversion effort. Mechanical treatment is expensive, but allows good control of patterns and brush species composition. The bulldozer blade is usually held slightly above ground in bulldozer control. The use of a heavy chain between two bulldozers, and related methods is less selective, less expensive, and represents a compromise solution.

Brush Control by Grazing

Goats may be useful in creating a mosaic of brush and herbaceous plants where dense brush formerly existed. Normally, burning, mechanical, or chemical treatment is first necessary to establish the desired pattern, after which goats may be used to maintain it. There are many practical problems involved with using goats for maintenance, and assistance should be sought from Cooperative Extension or from landowners who have used the method before beginning a project of this nature. Properly done, it can be compatible with deer range improvement.

Deer Habitat Improvement through Coordination with Livestock Use. On some ranges deer use and livestock use are in conflict. If a rate of stocking by either deer or livestock or both is permitted in excess of range capacity, competition for forage may become acute.

When deer damage occurs on private land, the state agency responsible for management of the animals has an obligation to take remedial action. Several avenues are open depending upon agreement between the landowner and the state. The problem can usually be solved by reduction of the deer herd, control of deer movements, payment for the damage, or acquisition of the land involved. Removal of deer to numbers in balance with available forage is the most practical solution. Since deer often use many plants that domestic livestock do not use and also use many areas where livestock will not go, competition is not direct. Some deer, and often quite sizeable populations, can inhabit private lands without serious conflict with livestock use. Furthermore, most stockmen do not object to reasonable numbers of deer on their lands.

On public lands, the public has a right to demand a fair share of the range for wildlife. Management plans for public lands ordinarily provide for dual use by deer and livestock. On such lands habitat can often be improved for deer by some of the following measures:

1. Exclusion of livestock use from critical "key" areas.
2. Stocking of livestock ranges on the basis of grass production only.
3. Adjustment in season of livestock use to reduce use of shrubs.
Ordinarily, livestock use most species of browse mainly after grasses are fully utilized or after grasses have matured and cured.
4. Leaving adequate browse food and cover for deer when revegetating livestock ranges.
5. Including palatable shrubs and legumes in revegetation seed mixtures.

Large scale deer habitat improvement will be easier to justify from an economic standpoint and will also produce greater and more lasting benefits when accompanied by full utilization of annual crops of deer.

Lack of Vegetation Management. Another vegetation management method is no action. Lack of action may be the most important factor in California causing declining deer habitat. Without purposeful management through logging, grazing, burning, or other similar methods, browse grows above the deer's heads and canopies become dense, crowding out understory vegetation. The nutritious grasses and broad-leafed plants are lost, and deer cannot reach browse. Their energy and nutrition sources disappear, and fawn production declines. Then we have the second kind of habitat problem, and herd reduction will help only marginally. The carrying capacity has been reduced, but even more, each deer must spend more energy obtaining food, and there is less left for reproduction.

Evaluating the Food Resource. How can we tell the condition of the food resource? We can measure the production, in pounds per acre, of preferred broad-leafed herbs when they are growing. These are such plants as filaree, clover, deer vetch, soft chess, and red brome. When there are too few deer, the preferred shrubs (browse) are unused, rapidly grow out of reach of deer, and thicken to impenetrability.

At population levels designed to produce maximum recruitment (maximum harvest), deer are healthiest. They can find plenty of nutritious food, but are using the resource to the limit of easy living. Therefore, the desirable shrubs show some use, but tender new shoots are not all gone at the end of the season.

At maximum standing crop of deer, the resource is being used to its limit. For winter browsing, this means nearly 100% use of all annual growth of desirable shrubs. For summer browsing, when shrubs are less resistant to damage, the figure is probably closer to 80%. Reproduction of these shrubs will be missing except for certain years of very favorable conditions, and in places protected from deer browsing. With too many deer, shrubs are damaged, with more than 100% use of annual growth (deer are eating old stems). Even with deer overpopulations, some shrubs are not eaten, or are eaten only lightly. All brushland is not good deer habitat.

Summary. There are three principles of deer management:

- 1) Deer have very specific requirements and not all brushy areas are good deer range.
- 2) We can manage for and identify results of: a) too many deer; b) too few deer; c) maximum production; d) maximum standing crop for the food resource. We don't know as much about some of the special requirements.
- 3) Each of us has different goals and values for deer husbandry and we all have some difficulty in accurately communicating these goals and values. Resolving the communication problem without anger is the first step in reaching solutions.

FEEDING STRATEGY OF DEER

By

E. Lee Fitzhugh and Woody Elliott
Extension Wildlife Specialist and Staff Research Associate
Wildlife Extension
University of California
Davis, CA 95616
February, 1983

The small mouth of deer permits them to selectively remove the most nutritious species in a mixture of many different grasses and forbs and the most nutritious parts of shrubs, such as new leaves on twigs. Experiments with sheep and cattle have shown that on a range where crude protein content of vegetation averaged from 3.4 to 5.2 percent the plants and parts of plants taken by sheep averaged 7.2 to 10.6 percent and by cattle 6.7 to 8.3 percent. Deer are even more selective than sheep. This indicates the importance of conservative stocking so that the animals have free choice of the most nutritious foliage and are not forced onto inadequate diets.

Under usual weather conditions, browse shoots and twigs become woody and tough by mid summer. Also by this time of year, green succulent herbaceous plants are in short supply. By August and September most deer are eating browse of low quality and are losing weight. Thus, on ranges where deer are non-migratory, such as coast ranges of California, the critical food supply period for deer is often late summer when herbage is dry and the forage offered by most shrub species is low in food value. The few species that are high in nutritive value during this period (such as California bay, buckeye, birchleaf mahogany and mountain white oak) are apt to be preferred and critical foods. The presence of such forages may be the difference between high or low deer mortality in late summer. This critical period often lasts until fall rains bring out green feed. Cold winters when heavy frosts kill back all new growth are also critical. With migratory deer herds, the critical period is usually mid or late winter when snows have covered the low growing plants and the deer are entirely dependent on the taller shrubs.

In good acorn years, on ranges where oaks are present, acorns are a preferred food in late summer and fall. Acorns are high in fats and carbohydrates and are a valuable forage at a season when other foods are low in quality.

The food first enters the biggest stomach compartment, the rumen, which functions like a fermentation vat. The environment of the rumen is without oxygen (anerobic), at a slightly acidic and constant (buffered) pH, at a constant temperature. Its food contents are mixed by muscular contractions of the rumen wall. These conditions are ideal for the life of microbes which inhabit the rumen. These bacteria and protozoa consume plants. A large part of plants is cellulose which cannot be digested by deer or any other organisms except microbes. The waste products of this microbial fermentation, such as acetic acid, a component of vinegar, are absorbed through the rumen wall and are used by deer as a source of energy. The second and third stomachs, the reticulum and omasum, absorb the fermentation acids.

Finally, the digested food particles move into the true stomach or abomasum where, as in nonruminants, the body provides acids to digest protein. Protein is contained in the bodies of the microbes that pass out of the rumen with the undigestible food particles. The digestion of these microbes and

their protein provides essential amino acids for the deer. (Deer are carnivores too!) Many rumen microbes can make their protein from nonprotein sources such as ammonia. They do not require specific amino acids to be present in their food. Thus, rumen microbes supply deer with energy as a by-product of their carbohydrate metabolism and essential amino acids from their body protein, while deer supply these microbes with a place to live.

Continued absorption of nutrients occurs as food passes through a long, narrow, small intestine which secretes digestive enzymes. Then, the food again undergoes microbial fermentation in the cecum, a large sac that protrudes from the intestinal tract, and the colon where water and more nutrients are absorbed by deer. Finally, the undigestible food particles are excreted from the rectum along with other waste products of the deer's metabolism.

The rate that food is burned in a body to support life is lower for large animals such as elk. Thus, small animals, such as deer, must eat more food relative to their body weight or must eat food that is more digestible and has more available nutrients. Also, the greater the capacity of the rumen to retain food relative to the body weight, the longer the time that the food can be retained in the rumen to ferment. Elk, which have a larger rumen to body weight ratio than deer, can eat forage that takes longer to digest in addition to requiring less food relative to its body weight. Thus, elk can eat foods of lower nutritional quality than deer which are known to be more highly selective feeders.

In a discussion of what black-tailed deer eat, Taber and Dasmann describe "the ideal diet and the real diet". These authorities on deer range ecology point out that if a deer lives in an area where all preferred food plants are present in ample quantity, "it will largely eat grass and herbs in the late winter and early spring, brush sprouts in the late spring, brush sprouts and succulent herbs in the summer, and browse and acorns in the fall". (See Figures 1 and 2) Browse is the main stay in winter. On California ranges where deer were originally the most numerous -- the open oak woodland with interspersed brush patches -- foods of these types were all available. Much of this type of land in California, particularly within the original deer winter ranges, is now being farmed or is used for sheep and cattle grazing. Deer have had to shift into other brush types, generally at higher elevations, where some of the preferred diet items are often in short supply. In the average present day deer habitat, one of the main deficiencies is herbaceous food -- grass and succulent herbs or forbs. These succulent plants are usually much higher in nutritive value during late winter and early spring than are the brush species and deer will come through the winter in much better condition and with fewer winter losses where such foods are available.

Table 1
A Comparison of the Optimum with the Usual Diet
(From Taber & Dasmann)

Season	Preferred food (where present)	Actual food eaten on heavy brush range
Nov - Dec	Acorns, browse, some new growth of grass and herbs	Mostly browse
Jan - Mar	Mostly new growth of grass & herbs	Mostly browse
Apr	New growth of brush	New growth of brush
May - Aug	Succulent herbs, some browse	Mostly browse
Sept - Oct	Acorns, some browse	Mostly browse

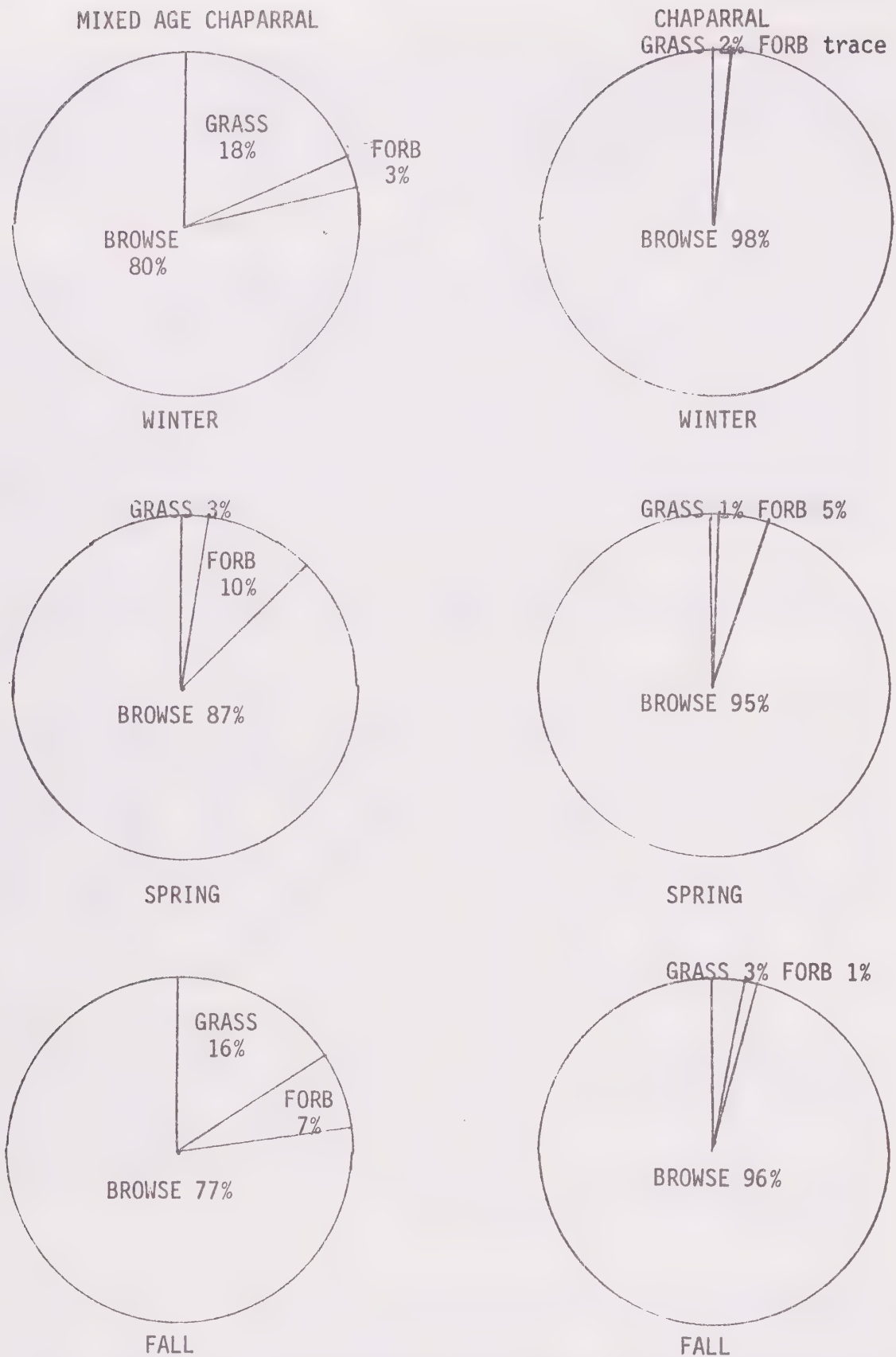
Some preferred shrubs are bitterbrush (Purshia tridentata), mountain whitethorn (Ceanothus cordulatus), deerbrush (Ceanothus integerrimus), birchleaf mahogany (Cercocarpus betuloides), mountain mahogany (Cercocarpus ledifolius), Fremont silk tassel (Garrya fremontii), bitter cherry (Prunus emarginata) and California redberry (Rhamnus crocea). Palatability of plants for deer varies in different sections of the deer range. It seems to be related to soil types and various chemicals found in the soil.

Comparison of what deer eat and what plants are available to be eaten demonstrates that only a few plant species comprise the bulk of the deer diet. These selected plant species are usually high in digestible protein and energy which are the nutrients most often in shortest supply of deer. Also, these selected plant species are low in "secondary compounds" which discourage their consumption by deer. These chemicals are contained in aromatic plant species such as sagebrush, juniper, and California bay and inhibit the fermentation processes of rumen microbes. Deer have been found dead of starvation during severe winters with their rumens full of sagebrush and dry grass. However, moderate amounts of aromatic plant species are consumed when the inhibitory compounds can be diluted with other plant species in the rumen.

At different times of the year, deer need different amounts of nutrients. Bucks eat a high quality diet during the spring and summer for growth so that they can be the biggest bucks, and therefore impregnate the most does, during the rut in the fall. Also, during the summer, they need to build up their energy reserves of body fat so that they can remain active during the rut and so that they can remain alive during the winter when nutritional forage is scarce. Does that successfully reproduce require a minimum level of protein and energy for the maintenance of their own physiological functions and then increasing amounts of these nutrients as their fetuses develop and lactation reaches a peak soon after the fawn is born (Figs. 3-6). After weaning her fawns, the doe uses the nutrients for maintenance, body growth and fat storage. This is necessary for winter survival in cold climates when the availability of forage and its nutrient content is low (Figs. 3-6). Fawns grow rapidly for several months after birth so that they can survive the winter season of nutritional stress. Their rapid growth is dependent on a nutritious diet which they first obtain as mother's milk and then from their own forage consumption.

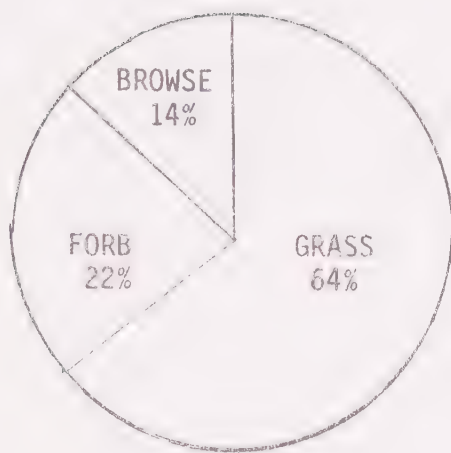
The reproductive cycle and corresponding nutrient requirements of deer are synchronized with the availability of protein and energy in the forage. On a summer range, protein and energy are plentiful in the forage and the nutritional requirements of deer are the highest. During the winter when the forage has low nutritional value, deer reduce their nutritional requirements by reducing their basal metabolic rate and activity. However, during winter, a deficit of protein and energy between consumption and demand still occurs (Figs. 3-6). During summer, protein may not be sufficiently available for the maximum production of fawns (Figs. 4, 6).

The nature of the deer, its body size, stomach size, and digestive strategy require a diet higher in energy, protein, and other nutrients than is usually found in the vegetation. To survive, deer must pick and choose only the most nutritious parts of their habitat. Larger herbivores, such as elk or cattle, are less demanding of quality and can survive on poorer range. This is the basis for competitive problems between herbivores. The range may look healthy, but if two herbivores both seek the same plant species and one of the animals needs it for survival, the one that doesn't need it as much will survive, while the other will die.

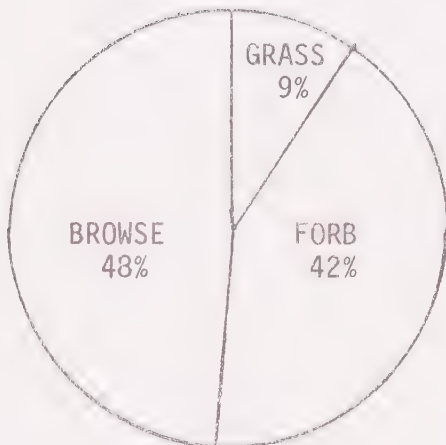


DIET COMPOSITION OF BLACK-TAILED DEER IN CHAPARRAL HABITATS OF MENDOCINO AND LAKE COUNTIES, CA (LONGHURST ET. AL. 1979).

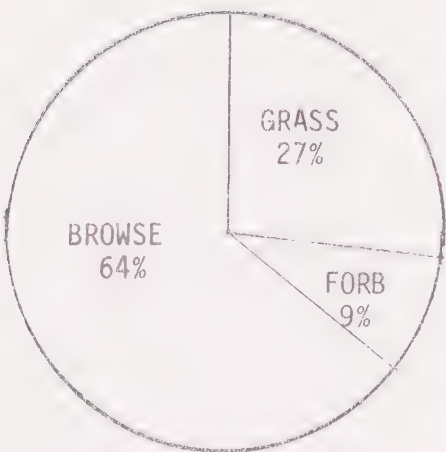
Figure 1.



WINTER



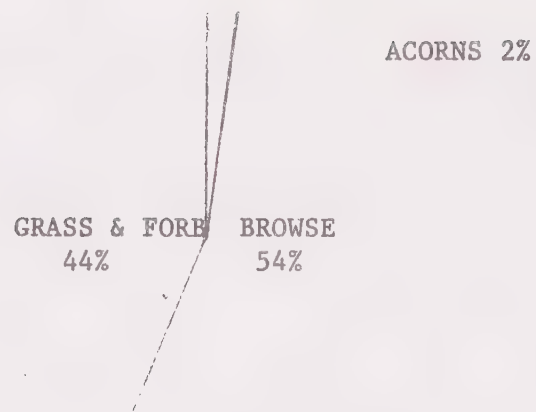
SPRING



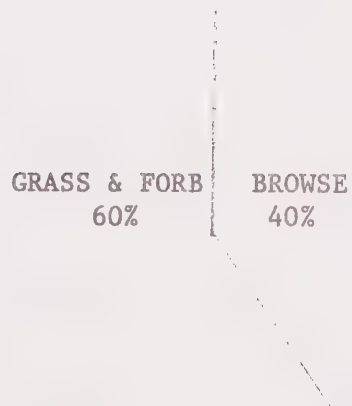
FALL

DIET COMPOSITION OF BLACK-TAILED DEER IN OAK-WOODLAND HABITAT OF MENDOCINO COUNTY, CA (LONGHURST ET. AL. 1979).

Figure 2.



WINTER



SPRING

BROWSE
100%

FALL

DIET COMPOSITION ON THE TEHAMA DEER WINTER RANGE (Leach and Hiehle, 1957).

Figure 2a

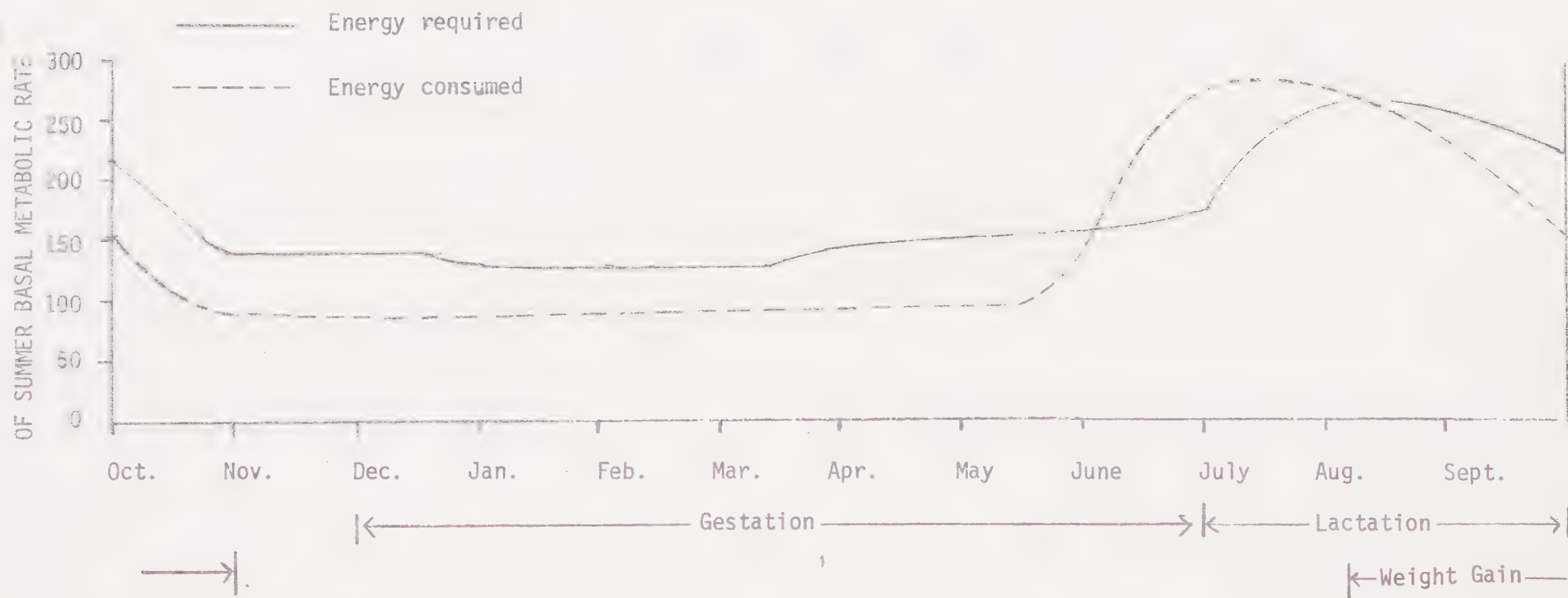


Figure 3. Energy balance for mule deer in Colorado.

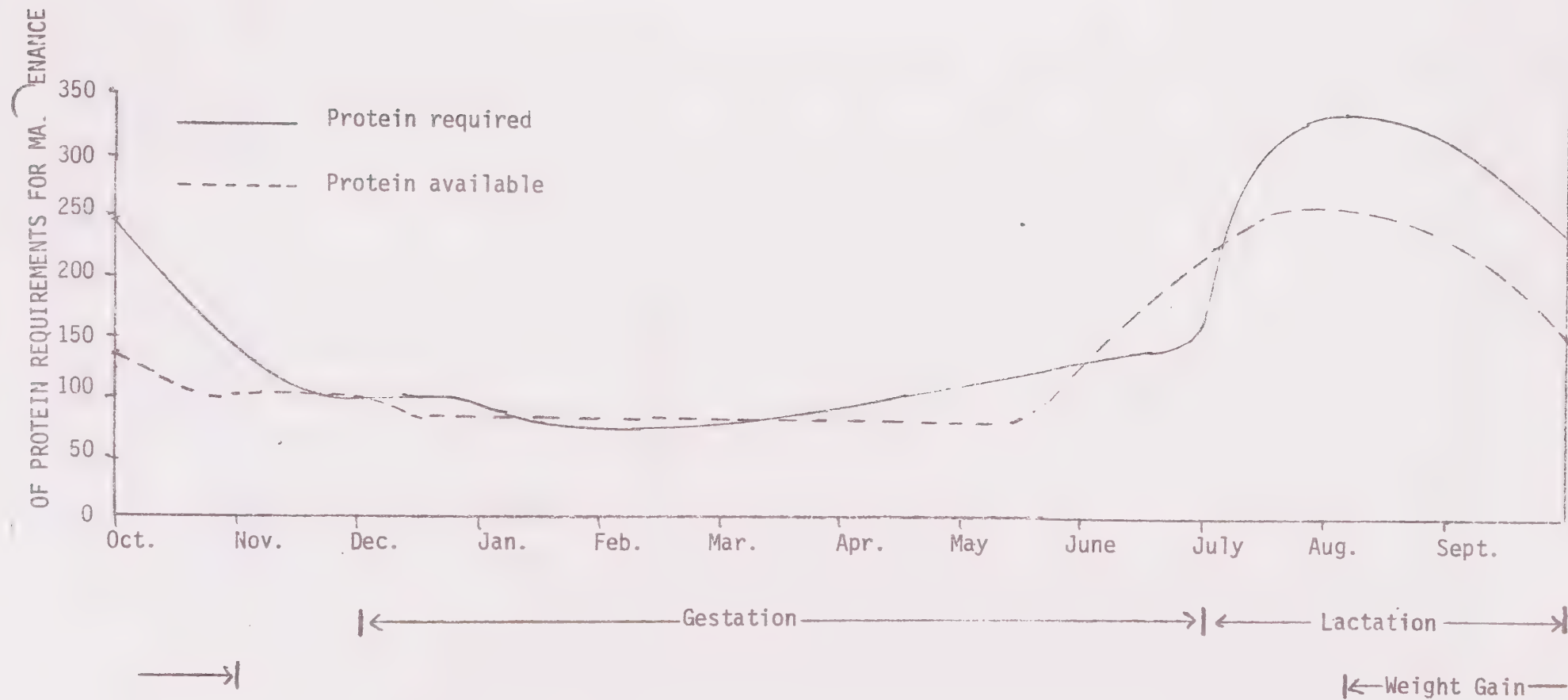


Figure 4. Protein balance for mule deer in Colorado.

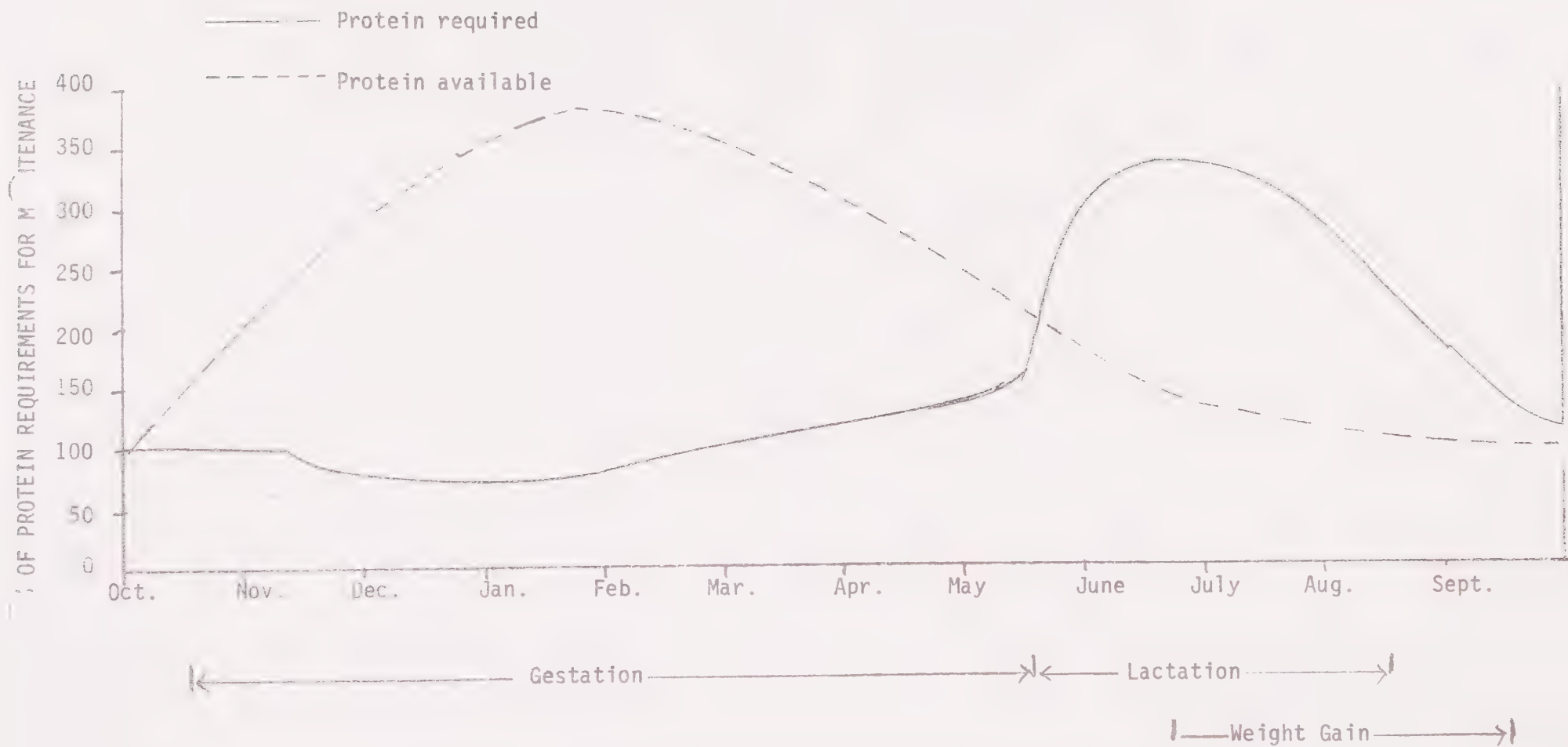


Figure 5. Protein balance of deer at Point Reyes, California.

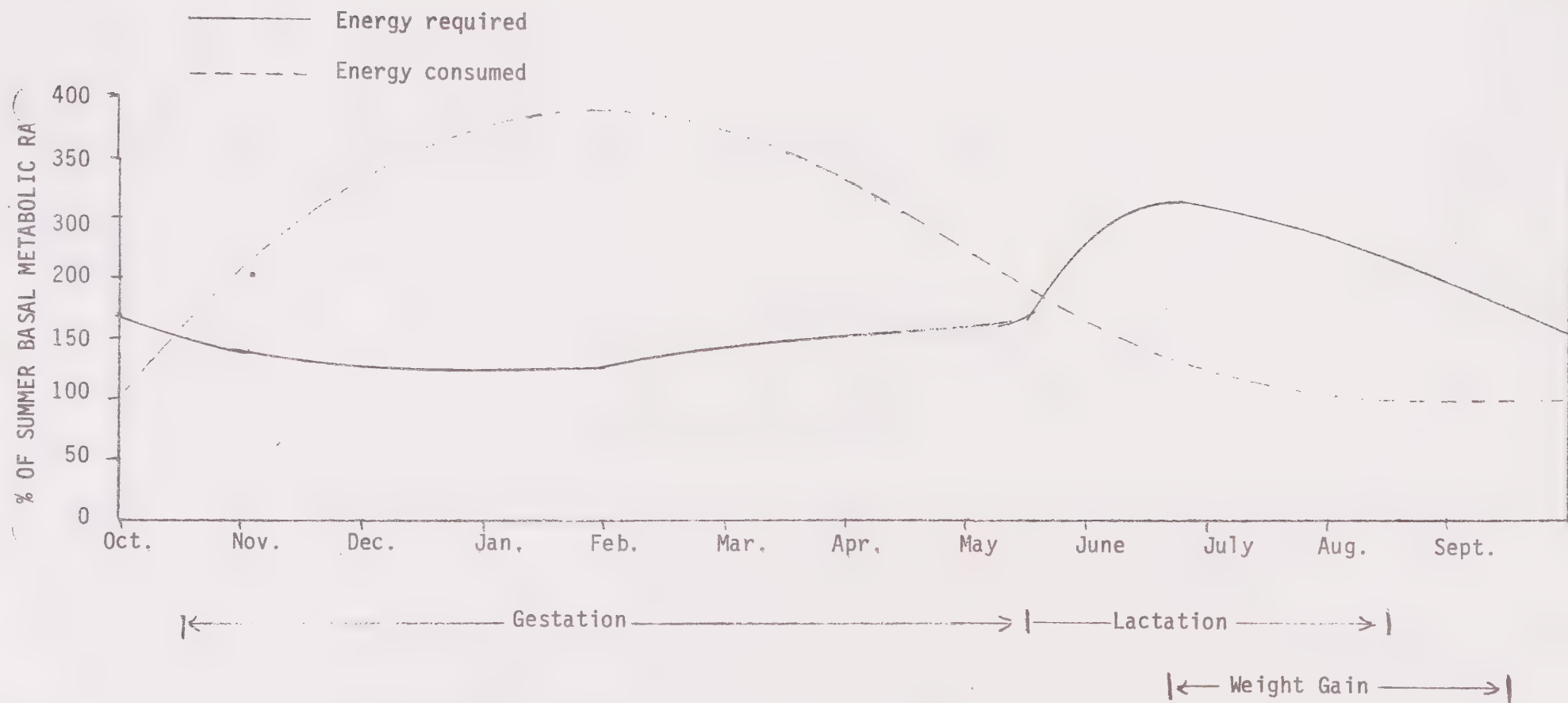


Figure 6. Energy balance of deer at Point Reyes, California.

DEPARTMENT OF FISH AND GAME

REGION 2
1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CALIFORNIA 95670
(916) 355-7030



March 29, 1983

Ms. Bettye Kircher, Director
Butte County Planning Department
7 County Center Drive
Oroville, CA 95965

Dear Ms. Kircher:

In response to your questions, recent Department comments submitted regarding proposed tentative parcel maps in Butte County have specified the amount of deer winter range lost to residential development in Butte County. This information was obtained by a survey of assessor parcel maps by biologist Jim Snowden in February and March of 1983.

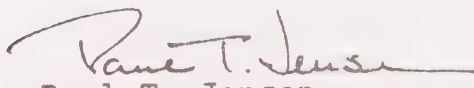
Parcel sizes significantly less than 40 acres in size were considered to have little value to migratory deer. Some parcels of 40 or more acres were considered lost if surrounded by smaller parcels, or if substantial residential development blocked migratory corridors to the undeveloped parcels.

It should be noted that these cumulative impacts do not show the substantial indirect impacts to adjacent parcels caused by dogs, poaching, harassment, roads, etc. These indirect impacts reduce the value of many more acres in addition to the documented losses.

The attached tables describe winter range losses caused by residential development in Butte County for the three herds involved.

If you have any questions, please contact Jerry Mensch, Environmental Services Supervisor, telephone (916) 355-7030.

Sincerely,


Paul T. Jensen
Regional Manager

Butte Co. Planning Comm.

MAR 31 1983

Oroville, California

Migratory Deer Herd Winter Range Losses
To Residential Development in Butte County

Table I

Range Totals (in acres)

<u>Deer Herd</u>	<u>Critical Range</u>	<u>Non-Critical Range</u>	<u>Total</u>
East Tehama	55,374	66,640	122,014
Bucks Mountain	138,714	61,900	200,614
Mooretown	60,840	53,164	114,004

Table II

Range Loss (in acres)

<u>Deer Herd</u>	<u>Critical Range</u>	<u>Non-Critical Range</u>	<u>Total</u>
East Tehama	32,360	10,181	42,541
Bucks Mountain	40,830	14,420	55,250
Mooretown	18,954	30,377	49,331

Table III

Percentage of Range Lost

<u>Deer Herd</u>	<u>Critical Range</u>	<u>Non-Critical Range</u>	<u>Total</u>
East Tehama	40	15	35
Bucks Mountain	28	23	28
Mooretown	31	57	34

DEPARTMENT OF FISH AND GAME

REGION 2

1701 NIMBUS ROAD, SUITE A

RANCHO CORDOVA, CALIFORNIA 95670

(916) 355-7030



January 31, 1983

Mrs. Betty Kircher, Director
Butte County Planning Department
7 County Center Drive
Oroville, CA 95965

Dear Mrs. Kircher:

The following information is submitted in answer to questions concerning deer in Butte County.

A. Deer Herds. There are three migratory deer herds which depend on areas in Butte County for all or part of their habitat requirements. These herds are as follows:

1. East Tehama
2. Mooretown
3. Bucks Mountain.

In addition, two resident deer herds occur in Butte County. These herds are:

1. Camp Beale
2. Sacramento Valley.

U. S. Geological Survey 15' quad maps are enclosed delineating the summer range, migratory corridors, winter range, and critical winter range for the migratory deer herds.

It should be understood that we are currently working on deer herd plans for all herds in the State. Part of the planning program entails studies of herds and movement, timing of migration, etc. This information will also aid further in refinement of the maps.

B. Hunting Zones in Butte County. There are two zones which encompass portions of Butte County. These zones are D-3 and D2X. A copy of the 1982 deer hunting map is enclosed. This map indicates seasons and bag limits.

C. Licenses Per Zone. Deer tag sales for each zone are as follows:

	<u>D2X</u>	<u>D3</u>
1978	NA	21,964
1979	21,427	19,957
1980	20,513	20,650
1981	19,980	21,406
1982	17,948	21,175

D. Deer Take Per Year:

	<u>D2X</u>	<u>D3</u>
1978	NA	1,328
1979	2,789	1,591
1980	1,888	1,329
1981	2,275	1,879
1982	1,952	1,164

E. Deer Harvest in Butte County:

1973	726
1974	444
1975	475
1976	431
1977	758
1978	488
1979	752
1980	547
1981	676
1982	505

F. Deer Populations Per Herd. Estimates of deer populations are extremely hard to determine and have a wide variability. Herd numbers can double or be reduced by half in only a few years based on weather and habitat conditions. The following are our best current estimates of deer populations for those herds found in Butte County:

1. East Tehama 40,000 to 60,000
2. Mooretown 6,000 to 9,000
3. Bucks Mountain 4,000 to 6,000

A black-tailed deer herd is a breeding population of deer which occupy a range common to that population. Since some interchange of deer may occur where herd boundaries adjoin one another, a herd boundary approximates the major portion of the range occupied by a breeding population. Black-tailed deer seldom occur in groups of more than a dozen individuals, and generally they are distributed through the range as individuals or small (2 to 5 deer) family groups. Deer migration does not occur as a movement at one time but rather as a gradual movement of individuals or small groups generally dispersed along ridge tops.

Jary 31, 1983

In response to your question on any differences between this material and information previously supplied on deer herds in Butte County, we have the following comments. A map was recently transmitted to Mr. Lowell Smith regarding the Mooretown Deer Herd. This map was outdated and, due to errors by personnel unfamiliar with the current herd boundaries, was sent to Mr. Smith. The maps accompanying this letter contain the most up-to-date information on Butte County deer herds and supercede or replace previously transmitted maps.

If you have any further questions, please contact Jerry Mensch, Environmental Services Supervisor, telephone (916) 355-7030.

Sincerely,



Paul T. Jensen
Regional Manager

JAN 17 1984

Oroville, California

CHAPTER 18.94

"NH" NATURAL HABITAT COMBINING DISTRICT

18.94.010. The intent of the "NH" Natural Habitat Combining District is to protect areas which are recognized and established in the Lassen County General Plan and applicable Area Plans as important to the wildlife populations of Lassen County. These resources are important to the scenic, recreation, cultural, social, and economic values of the county. Accordingly, the County, in desiring to provide an appropriate place for these wildlife populations and to minimize the effects of development on them, while at the same time maximizing the enjoyment and use of private property, establishes the regulations provided herein.

18.94.020. Except as otherwise provided in this Chapter, lands in an "NH" Combining District shall be subject to the provisions of the companion zone or zones with which it is combined, and shall also be subject to the provisions of Chapters 18.102 through 18.108 of this Title.

18.94.030 Development Standards.

1. In those areas where the General Plan, or an Area Plan, has delineated Natural Habitat areas, the California Department of Fish and Game has identified and the County of Lassen has adopted specific wildlife concerns and appropriate development limitations and mitigations necessary therein. These areas shall have the "NH" zoning district combined with the principal zoning designation.
2. An average building site area shall be established for each "NH" District and shall be indicated by a figure following the "NH" in the zoning district designation. Said figure shall represent the average building site area in acres.

Development projects creating building sites in a "NH" District shall be designed so that the average acreage per parcel for all parcels created by the project is equal to or greater than the average building site area specified for the applicable zoning district.

18.94.040 Site Development Plan Requirements.

1. In any district with which is combined an "NH" District, approval of a site development plan shall be required in conjunction with any application subject to approval by County agencies including, but not limited to, building permits, use permits, subdivision and

parcel map applications.

2. Any such site development plan shall be considerate of and compatible with identified wildlife resources, the General Plan or applicable Area Plan. Such development shall also be considerate of existing neighboring applications.
3. Such site development plan shall accompany a submitted development application and shall show (1) parcel dimensions and parcel size, (2) existing improvements, (3) proposed locations, sizes, and types of rights-of-way, easements, utility line routes, roads, fences, and outdoor lighting, (4) proposed size and distribution of structures, and (5) proposed level of site disturbance, including tree and brush removal, earth removal, topographic changes, waterway alterations, and other considerations.
4. The fee for such review and necessary appeals shall be established by the Board of Supervisors.

18.94.050 Site Development Plan Review.

1. Such site development plan shall be considered by the Planning Department in an endeavor to ascertain its compatibility with the intent and provisions of this Chapter and the Lassen County General Plan, and applicable Area Plan policies. To this end, the Planning Department shall suggest any changes in the site development plan as it may deem to be necessary to accomplish the purposes of this Chapter, and shall not approve any such plan until it is satisfied that such purposes will be accomplished by the site development plan.
2. In the case of site developments which are subject to C.E.Q.A. review, the Planning Department shall review the site development plan as part of the Initial Study. Such review shall comply with C.E.Q.A. requirements to mitigate potential environmental impacts, as well as comply with the criteria established in the General Plan or applicable Area Plan.
3. In the case of site developments which are exempt from C.E.Q.A. review, the Planning Department shall review site development plans for conformance with the criteria established in the General Plan or applicable Area Plan. Such review shall be incorporated whenever possible into the permit or project application process which initiated the site development plan review.
4. The site development plan review shall be conducted within time frames consistent with Lassen County's procedure for environmental

review and/or the permit or project application process which initiated the site development plan review. An approved site development plan shall be attached to all related applications and shall be considered in review of all related projects.

18.94.060 Appeal.

1. In case the applicant is not satisfied with the action of the Planning Department, the applicant may, within thirty (30) days after such action, appeal in writing to the Planning Commission. The Planning Commission shall hold a hearing on said appeal and shall render its decision thereon within thirty (30) days after the filing thereof.
2. In case the applicant is not satisfied with the action of the Planning Commission, the applicant may, within ten (10) days after such action, appeal in writing to the Board of Supervisors. The Board shall hold a hearing on said appeal and shall render its decision thereon within thirty (30) days after filing thereof.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
530 SOUTH EAST ASIAN AVENUE
CHICAGO, ILLINOIS 60607

RECEIVED

1971

TO THE DIRECTOR OF THE UNIVERSITY OF CHICAGO
FROM THE DEPARTMENT OF CHEMISTRY
SUBJECT: [Illegible]

1. [Illegible]

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